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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/544,895	08/08/2005	Kazuhiro Hattori	124428	6457
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/544,895

**Applicant(s)**

HATTORI ET AL.

**Examiner**

Patricia A. George

**Art Unit**

1794

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10/24/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3, 5-9, 11, 13-15, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) 9, 11 and 13-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5-8, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/24/2008 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, and 8, are rejected under 35 U.S.C. 103(a) as being unpatentable over Belser in view of the combination of Ichihara and Norgate.**

Belser teaches double sided magnetic recording medium disks are known to be manufactured (i.e. the existence of manufacturing methods) for use with a set of flying heads. (See column 5. lines 5-10). Belser also teaches the pits and grooves in the double sided magnetic recording medium disks can be defined by applying a photo sensitive mask layer on a substrate such as glass or aluminum, photo lithographically

defining the desired pit and groove regions and the photo sensitive layer, and etching the substrate by means such as reactive ion etching or ion milling followed by removal of the photo sensitive layer. For example some of the well known photolithography steps include forming continuous recording layers formed in surfaces of a substrate by a step of processing a resist layer into a predetermined pattern, a step of transferring the predetermined pattern in the resist to a mask layer, and a step of transferring the predetermined pattern in the mask to the continuous recording layer.

Belser does not teach continuous recording layers are formed which divide recording layers, each formed by a number of divided recording elements.

Ichihara teaches continuous recording layers are formed which divide recording layers, each formed by a number of divided recording elements. See summary.

It would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify the method of manufacturing double sided magnetic recording medium disks, as Belser, to include that continuous recording layers are formed which divide recording layers, each formed by a number of divided recording elements, as in the applicants' specifically claimed limitation, because Ichihara teaches that such formations are known and are effective for manufacturing double sided magnetic recording medium disks, and one of skill would recognize that there is a cost savings to manufacturing when limiting or reducing the number of process steps. Further, one of ordinary skill would be motivated to utilize such patterning methods for manufacturing double sided magnetic recording medium disks continuously, because, it

has been held that the elimination of a step supports a prima facie obviousness determination. See MPEP 2144.04.

The modified invention of Belser does not teach to ion beam etch both sides of a substrate simultaneously using an incident angle of 90 degrees with respect to the surface of the object.

Norgate teaches, in section 5.6, that work pieces are generally simultaneously ion beam etched from both sides to minimize stress (i.e. warping). Norgate (1974) illustrates the incident angle is perpendicular to the work piece, which reads on a 90 degree incident angle.

It would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify the invention of pattern transferring double sided magnetic recording medium disks, as Belser, to include a step of ion beam etching both sides of a substrate simultaneously using an incident angle of 90 degrees with respect to the surface of the object, as claimed, because Norgate provides one of skill in the art with a reasonable expectation of success by teaching that such steps are known to be effective for ion beam etching and provide the benefit of reduced stress (i.e. warping); and further, one of skill would recognize that there is a cost savings to manufacturing when limiting or reducing the number of process steps, such etching both sides at once.

Further, all of the claimed elements were known in the prior art and one skilled in the art would have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded

predictable results to one of ordinary skill in the art at the time of the invention. The prior art included each element claimed although not necessarily in a single reference, and one of ordinary skill in the art would have combined the elements as claimed by known patterning methods, and in combination, each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable because it has been held that teachings of multiple patents are able to fit together like a puzzle. More further, a predictable use of prior art elements according to their established functions to achieve a predictable result is *prima facie* obvious. See *KSR Int'l Inc. v. Teleflex Inc.*, 127 S Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007) and MPEP 2142.

As for claim 8, and each and every process step being performed to both surfaces of the object simultaneously, such a step would clearly eliminate multiple process steps which is held as beneficial.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the method of magnetic recording medium manufacturing, as Belser, to simultaneously process both sides of the a substrate, as in the applicants' specifically claimed limitation, because each method step is known to be suitable in the art of forming magnetic recording medium, and further, one of skill would recognize that there is a cost savings to manufacturing when limiting or reducing the number of process steps; and further it has been held that the elimination of a step supports a *prima facie* obviousness determination. See MPEP 2144.04.

**Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belser in view of the combination of Ichihara, and Norgate, as in claims 1 and 8 above, further in view of George.**

Belser does not teach the resist pattern as in claim is performed to simultaneously process both surfaces of the object.

George illustrates process steps for lithography include the use of a resist layer which is simultaneously formed on both surfaces of an object into a predetermined pattern (see figures 7-9) to super-imprint nanostructures.

It would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify the method of pattern transfer for manufacturing double sided magnetic recording medium disks, as Belser, to include any known lithographic patterning steps, including processing a resist layer into a predetermined pattern performed simultaneously on both surfaces, as in the applicants' specifically claimed limitation, because simultaneous methods for manufacturing reduce process time, which is cost saving.

**Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belser in view of the combination of Ichihara, and Norgate, as in claims 1 and 8 above, further in view of Kawanishi.**

The modified teaching of Belser is silent with regard to the removal of the resist before etching the continuous recording layer, as in claim 5.

Kawanishi teaches photolithographically defining methods for magnetic recording medium, include continuous recording layers formed in surfaces of a substrate by a step of processing a resist layer into a predetermined pattern, a step of transferring the predetermined pattern in the resist to a mask layer, and a step of transferring the predetermined pattern in the mask to the continuous recording layer.

Kawanishi teaches to remove the resist before etching a continuous recording layer, as in claim 5. See abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify the method of manufacturing double sided magnetic recording medium disks, as Belser, to include a step of the removing the resist before etching the continuous recording layer, as claimed, because Kawanishi teaches that such method steps are known and effective for manufacturing double sided magnetic recording medium disks, and it is known to provides the benefit of channeling the etching for a desired pattern, and therefore one in the art would have a reasonable expectation of success.

**Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belser in view of the combination of Ichihara, and Norgate, as applied to claims 1 and 8 above, further in view of Berg.**

The modified invention of Belser does not teach simultaneous deposition to both sides of a substrate, as in claim 6.

Berg teaches the step of simultaneous deposition to both sides of a substrate.



It would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify the invention of pattern transferring double sided magnetic recording medium disks, as Belser, to include a step of simultaneous deposition to both sides of a substrate, as in the applicants' specifically claimed limitation, because Berg teaches that such method steps are known and effective, and further, one of skill would recognize that there is a cost savings to manufacturing when limiting or reducing the number of process steps. Further, in the absence of unexpected results, one of ordinary skill would be motivated to use such patterning methods for manufacturing double sided magnetic recording medium disks simultaneously, because, it has been held that the elimination of a step supports a prima facie obviousness determination. See MPEP 2144.04.

**Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belser in view of the combination of Ichihara, and Norgate, as in claims 1 and 8 above, further in view of Boitnott (5,667,592).**

Belser does not teach a plurality of objects are processed simultaneously, as in claim 7.

Boitnott illustrates a method for processing multiple object simultaneously, that can be used for any hot or cold processing such as etching (i.e. ion beam etching).

It would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify the method of pattern transfer for manufacturing double sided magnetic recording medium disks, as Belser, to include a step of etching multiple

objects at the same time, because parallel processing would speed up manufacturing which is known to eliminate production costs..

**Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belser in view of the combination of Ichihara, Norgate, and George, as applied to claim 3 above, further in view of Kawanishi.**

All references cited for the reasons as discussed in claims 1, and 8 above, are incorporated herein.

The modified teaching of Belser is silent with regard to the removal of the resist before etching the continuous recording layer, as in claim 17.

Kawanishi teaches to remove the resist before etching a continuous recording layer, as in claim 17. See abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify the method of manufacturing double sided magnetic recording medium disks, as Belser, to include a step of the removing the resist before etching the continuous recording layer, as claimed, because Kawanishi teaches that such method steps are known and effective for manufacturing double sided magnetic recording medium disks, and it is known to provides the benefit of channeling the etching for a desired pattern, and therefore one in the art would have a reasonable expectation of success.

**Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belser in view of the combination of Ichihara, Norgate, and George, as applied to claim 3 above, further in view of Berg.**

All references cited for the reasons as discussed in claims 1, and 8 above, are incorporated herein.

The modified invention of Belser does not teach simultaneous deposition to both sides of a substrate, as in claim 18.

Berg teaches the step of simultaneous deposition to both sides of a substrate.

It would have been obvious to one of ordinary skill in the art at the time of invention was made, to modify the invention of pattern transferring double sided magnetic recording medium disks, as Belser, to include a step of simultaneous deposition to both sides of a substrate, as in the applicants' specifically claimed limitation, because Berg teaches that such method steps are known and effective, and further, one of skill would recognize that there is a cost savings to manufacturing when limiting or reducing the number of process steps. Further, in absence of unexpected results, one of ordinary skill would be motivated to use such patterning methods for manufacturing double sided magnetic recording medium disks simultaneously, because, it has been held that the elimination of a step supports a prima facie obviousness determination. See MPEP 2144.04.

### ***Response to Arguments***

On page 7, it is asserted that the office action, of 6/25/2008, fails to address the newly amended limitations. The examiner agrees, and offers a new grounds of rejection, above. As to discussion toward the incident angle of 90 degree being novel, please see figure 2 of Norgate (1974) which illustrates the incident angle is perpendicular to the work piece, which reads on a 90 degree incident angle.

On page 8, it is stated that the instant invention provides unexpected results of suppressed warping, however no evidence has been provided to support such an assertion. Further note the reference of Norgate (1974) which teaches in section 5.6 that the species are generally simultaneously ion beam etched from both sides to minimize stress (i.e. warping).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia A. George whose telephone number is (571) 272-5955. The examiner can normally be reached on Tue. - Fri. between 9:00 am and 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patricia A George  
Examiner  
Art Unit 1794

/Patricia A George/  
Examiner, Art Unit 1794

/Binh X Tran/  
Primary Examiner, Art Unit 1792